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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/560,748	03/02/2007	Wolfram Schmid	095309.57193US	1676

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EXAMINER	
COLEMAN, KEITH A	
ART UNIT	PAPER NUMBER
3747	

MAIL DATE	DELIVERY MODE
04/04/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/560,748	SCHMID ET AL.	
	Examiner	Art Unit	
	KEITH COLEMAN	3747	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 December 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *18-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *18-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 18, 19, 21, 27, and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Rothe (US Patent No. 3,217,487).

With regards to claim 18, the patent to Rothe discloses an internal combustion engine having an exhaust gas recirculation device, **an exhaust gas turbocharger,** and cylinder groups (Col. 1, Lines 15-20, Figure 2), whereby exhaust gas from each cylinder group is dischargeable separately via respective exhaust pipes (Col. 1, Lines 15-20, Figure 2), **arranged to be feedable to the exhaust gas turbocharger selectively independently of each other,** wherein a recirculation line of the exhaust gas recirculation device branches (17, Col. 2, Lines 30-35, Figure 3) and opens out into an induction section of the internal combustion engine (Col. 1, Lines 15-20) and the cylinder groups are arranged to be operated with an identical or different power output (Col. 2, Lines 55-60), and the recirculation line branches off from **only** one of the **exhaust pipes of the cylinder group that is operable** with a higher power output in at least one operating point (Col. 2, Lines 55-60). It should be noted that when both valves 24 and 25 are opened or closed, the cylinder groups are operating at an identical

power output. When both are not opened or closed, the cylinder groups are operating at a different power output (See Col. 1, Lines 24-30).

With regards to claim 19, the patent to Rothe discloses wherein specific power of cylinders of one cylinder group differs from specific power of the cylinders of another cylinder group (See Figures 2 and 3). It should be noted that when both are not opened or closed, the cylinder groups are operating at a different power output (See Col. 1, Lines 24-30).

With regards to claims 21 and 29, the patent to Rothe discloses wherein an exhaust gas turbine (8, Figures 1-3) of **the** exhaust gas turbocharger is operatively arranged in the exhaust section (via manifolds 16 and 17).

With regards to claim 27, the patent to Rothe discloses an internal combustion engine having an exhaust gas recirculation device, **an exhaust gas turbocharger,** and cylinder groups (Col. 1, Lines 15-20, Figure 3), in which exhaust gas from each cylinder group is dischargeable separately via respective exhaust pipes (Figures 2 and 3) **arranged to be feedable to the exhaust gas turbocharger selectively independently of each other**, comprising a recirculation line of the exhaust gas recirculation device branches and opens out into an induction section of the internal combustion engine (Figure 3, via intake manifold 17 connected to compressor 9 and exhaust manifold 17 connected to turbine 8), and the cylinder groups are arranged to be

selectively operated with an identical or different power output (Col. 1, Lines 24-30), wherein the cylinder groups are operable with different air/fuel ratios (Col. 1, Lines 32-36), and the recirculation line exhaust gas recirculation device branches off from one of the exhaust pipes associated with the cylinder group **that is operable** with a lower air/fuel ratio in at least one operating point (Figure 3, via intake manifold 17 connected to compressor 9 and exhaust manifold 17 connected to turbine 8). It should be noted that when both valves 24 and 25 are opened or closed, the cylinder groups are operating at an identical power output. When both are not opened or closed, the cylinder groups are operating at a different power output (See Col. 1, Lines 24-30) and different air/fuel ratios (Col. 1, Lines 32-36).

3. Claims 35-40 are rejected under 35 U.S.C. 102(b) as being anticipated by Evans et al. (US Patent No. 4,249,382).

With regards to claim 35, the patent to Evans et al. discloses discharging exhaust gas from each cylinder group separately via a respective exhaust pipe (Figure 2) **that is feedable to the exhaust gas turbocharger**, wherein a recirculation line of the exhaust gas recirculation device branches off from one of the exhaust pipes and opens into an induction section of the internal combustion engine (Figure 2), and selectively operating the cylinder groups with an identical or different power output, such that one of the cylinder groups, whose exhaust pipe is connected to the recirculation line is operated with a variable power output (Abstract).

With regards to claim 36, the patent to Evans et al. discloses wherein the cylinder groups are operable with different air/fuel ratios (Col. 6, Lines 8-15), and the cylinder group whose exhaust pipe is connected to the recirculation line is operable with a variable air/fuel ratio (Col. 6, Lines 8-15).

With regards to claim 37, the patent to Evans et al. discloses wherein the air/fuel ratio is reduced by increasing a fuel proportion (Col. 6, Lines 8-15). It should be noted that reducing the amount of air inherently increases the fuel proportion.

With regards to claim 38, the patent to Evans et al. discloses wherein different ignition points are set in the cylinder groups (Col. 3, Lines 5-11, Col. 3, Lines 60-65, Figure 5). It should be noted that ignition points are changed as the fuel rate or engine load is increased or decreased.

With regards to claim 39, the patent to Evans et al. discloses wherein different fuel injection profiles are set in the cylinder groups (Col. 3, Lines 5-11, Col. 3, Lines 60-65, Figure 5).

With regards to claim 40, the patent to Evans et al. discloses wherein an air proportion is reduced to decrease the air/fuel ratio (Col. 6, Lines 8-15).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 22, 23, 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rothe (US Patent No. 3,217,487) in view of Halimi et al. (US Patent No. 5,560,208).

With regards to claims 22 and 30, the patent to Rothe discloses all the limitations of the claimed subject matter except wherein the exhaust gas turbine is of two-flow configuration, with each exhaust gas flow of the exhaust gas turbine being operatively connected to a respective one of the exhaust pipes. The patent to Halimi et al. discloses wherein the exhaust gas turbine (22, Col. 4, Lines 60-64) is of two-flow configuration (via volutes 18 and 20, Figure 1, Col. 4, Lines 60-64), with each exhaust gas flow of the exhaust gas turbine being operatively connected to a respective one of the exhaust pipes (via exhaust manifolds 14 and 16, Figure 1, Col. 4, Lines 60-64). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the exhaust and turbine of Rothe with a two-flow configuration in view of the teaching to Halimi et al., in order to enhance performance (Col. 3, Lines 20-25).

With regards to claims 23 and 31, the patent to Rothe further discloses wherein exhaust gas flows are of different sizes (Col. 2, Lines 35-39), a smaller of the exhaust gas flows being connected to the exhaust pipe (19) associated with the exhaust gas recirculation device (28, Col. 2, Lines 49-51, Figure 3).

8. Claims 20, 24, 25, 26, 28, 32, 33, and 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rothe (US Patent No. 3,217,487) in view of Evans et al. (US Patent No. 4,249,382).

With regards to claim 20, the patent to Rothe discloses cylinder groups. Rothe does not disclose the cylinder groups comprising a different number of cylinders. Evans et al. discloses cylinder groups comprising a different number of cylinders (Figure 2). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the cylinder groups of Rothe with a different number of cylinders in view of the teaching to Evans et al., in order to recirculate exhaust gas in to the inlet manifold (Col. 1, Lines 10-20).

With regards to claim 24, the patent to Rothe discloses an exhaust gas turbine. Rothe does not disclose a variable turbine geometry arrangement for adjustably setting an active turbine inlet cross-section. Evans et al. discloses a variable turbine geometry arrangement for adjustably setting an active turbine inlet cross-section (Col. 4, Lines 1-5, Figure 2). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the exhaust gas turbine of Rothe with a variable turbine geometry in view of the teaching to Evans et al., in order to reduce back pressure and sufficient boost (Col. 4, Lines 1-5).

With regards to claim 25 and to further prosecution, the patent to Rothe discloses all the limitations of the claimed subject matter except a variable turbine geometry arrangement in association with a turbine inlet cross-section of each of the exhaust gas flows. The patent to Evans et al. discloses a variable turbine geometry arrangement in association with a turbine inlet cross-section of each of the exhaust gas flows (Col. 4, Lines 1-5, Figure 2).

With regards to claim 26 and to further prosecution, the patent to Rothe discloses all the limitations of the claimed subject matter except a variable turbine geometry arrangement is associated with the turbine inlet cross-section of the exhaust gas flow associated with the exhaust gas recirculation device. The patent to Evans et al. discloses a variable turbine geometry arrangement is associated with the turbine inlet cross-section of the exhaust gas flow associated with the exhaust gas recirculation device (Col. 4, Lines 1-5, Figure 2).

With regards to claim 28, the patent to Rothe discloses all the limitations of the claimed subject matter except wherein the cylinder group associated with the exhaust gas recirculation device comprises a smaller number of cylinders than another cylinder group, which is independent of the exhaust gas recirculation device. Evans et al. discloses wherein the cylinder group associated with the exhaust gas recirculation device comprises a smaller number of cylinders than another cylinder group which is independent of the exhaust gas recirculation device (Figure 2).

With regards to claim 32 and to further prosecution, the patent to Rothe discloses all the limitations of the claimed subject matter except wherein the exhaust gas turbine has a variable turbine geometry arrangement for adjustably setting an active turbine inlet cross-section. Evans et al. discloses wherein the exhaust gas turbine has a variable turbine geometry arrangement for adjustably setting an active turbine inlet cross-section (Col. 4, Lines 1-5, Figure 2).

With regards to claim 33 and to further prosecution, the patent to Rothe discloses all the limitations of the claimed subject matter except wherein the variable turbine geometry arrangement is associated with the turbine inlet cross-section of the exhaust gas flow associated with the exhaust gas recirculation device. Evans et al. discloses wherein the variable turbine geometry arrangement is associated with the turbine inlet cross-section of the exhaust gas flow associated with the exhaust gas recirculation device (Col. 4, Lines 1-5, Figure 2).

With regards to claim 34 and to further prosecution, the patent to Rothe discloses all the limitations of the claimed subject matter except wherein the variable turbine geometry arrangement is associated with the turbine inlet cross-section of the exhaust gas flow associated with the exhaust gas recirculation device. Evans et al. discloses wherein the variable turbine geometry arrangement is associated with the turbine inlet

cross-section of the exhaust gas flow associated with the exhaust gas recirculation device (Col. 4, Lines 1-5, Figure 2).

Response to Arguments

Applicant's arguments filed 12/20/2007 have been fully considered but they are not persuasive.

Applicant's Arguments

Independent claims 18 and 27 are rejected under 35 U.S.C. § 102(b), along with various dependent claims, as anticipated by U.S. Patent 3,217,487 to Rothe. Reconsideration is requested. The Rothe patent does not disclose an internal combustion engine having an exhaust gas recirculation device as claims 18 and 27 require; the Rothe supercharger patent is not concerned at all with exhaust gas recirculation. To the extent that exhaust gas is not discharged into the Rothe tail pipe 10 after passing through the turbine 8, it is by-passed through a pipe 13 to send the exhaust gas directly into the tail pipe when a maximum exhaust pressure has been exceeded. In any event, the Rothe patent neither discloses nor suggests the features set forth in currently amended claims 18 and 27 above. Withdrawal of the rejection of both claim 18 and claim 27 based on the Rothe patent is in order and is requested. Nothing in the other documents discussed in sections 6, 10, or 11 on pages 6-13 of the Office Action suggests modifying the Rothe supercharger so as to meet the limitations

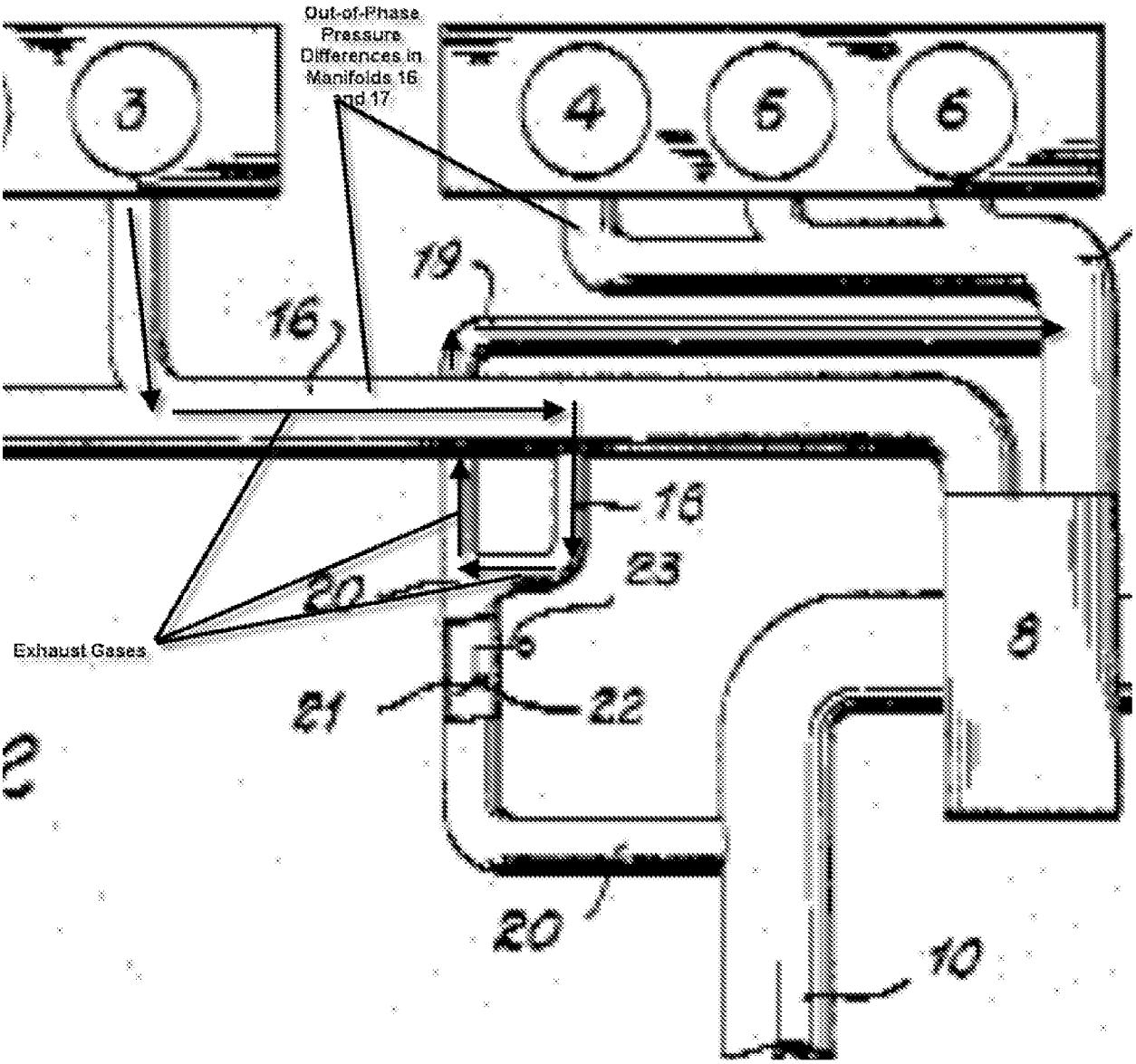
noted, moreover, and claims 18 and 27 above should now be patentable. Claims 19-26, which depend on claim 18, and claims 28-34, which depend on claim 27, are considered patentable as well.

Independent claim 35 is rejected under 35 U.S.C. § 102(b), along with dependent claims 36-40, as anticipated by U.S. Patent 4,249,382 to Evans et al. Reconsideration is requested. Claim 35 is amended above to recite that the method includes discharging exhaust gas from each cylinder group separately via a respective exhaust pipe that is feedable to the exhaust gas turbocharger. The Evans et al. system is not operated in a manner meeting the limitations now appearing in claim 35, and the anticipation rejection of claim 35 is overcome. The other prior art relied on by the Examiner fails to suggest modifying the Evans et al. system so as to be operated as claim 35 now requires, moreover, and claim 35 above should now be patentable. Dependent claims 36-40 should be patentable as well.

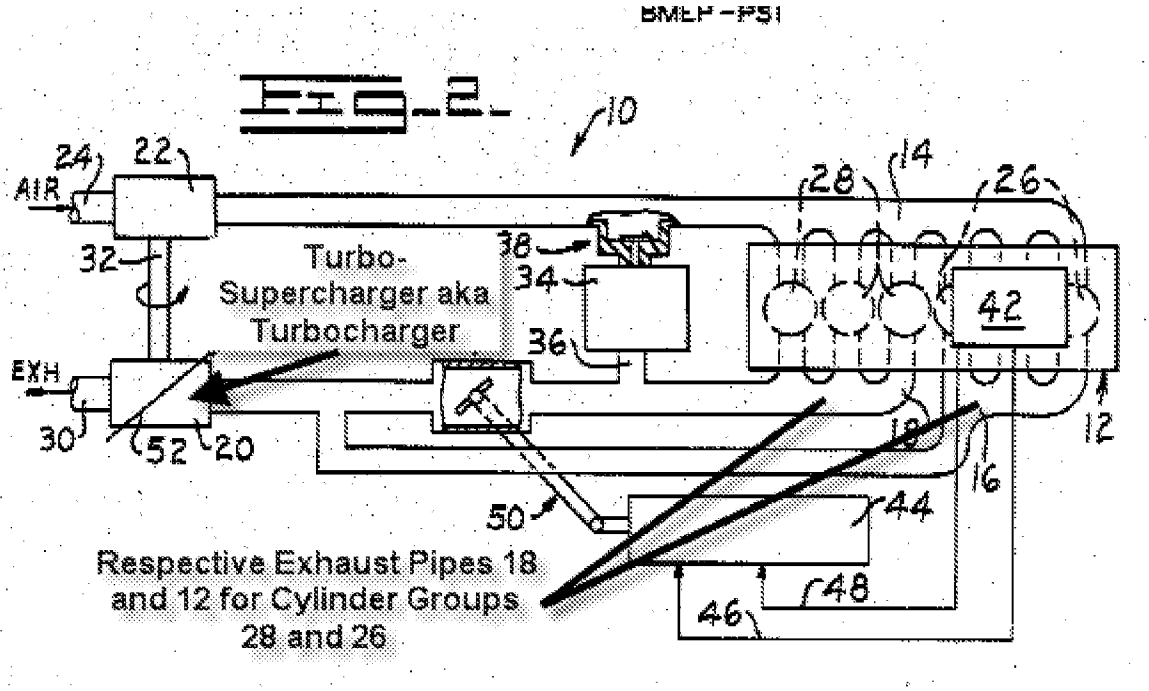
Examiner's Response to Arguments

With regards to Applicant's first argument, Rothe discloses exhaust gas recirculation. **Circulation** is defined as 'an act or **instance** of circulating, **moving in a** circle or **circuit**, or flowing' and **recirculation** is defined as '**circulation again'** or 'an act or **instance of** circulating, **moving in a** circle or **circuit again**' and Rothe clearly shows exhaust gas recirculation or an instance (i.e. **when a maximum exhaust**

pressure has or not been exceeded) of moving in another circuit in Figure 2. When the butterfly valve 21 is closed, exhaust gases are inherently recirculated from conduit 16 to conduit 19 to tailpipe 10 and explicitly states that the exhaust gas pressures are out-of-phase and further causes pressure differences in the exhaust manifolds 16 and 17 (Col. 2, Lines 60-65), and when the butterfly valve 21 is opened, the exhaust gases are recirculated into the tailpipe 10. Also, Applicant is reminded that a turbo-driven supercharger is a turbo-supercharger or also known as a turbocharger. Thus, it is very clear that Rothe supercharger driven by exhaust turbine patent is concerned with exhaust gas recirculation.



With regards to Applicant's second argument that discharging exhaust gas from each cylinder group separately via a respective exhaust pipe that is feedable to the exhaust gas turbocharger, Evans et al. clearly shows in Figure 2 discharging exhaust gas from each cylinder group separately via a respective exhaust pipe that is feedable to the exhaust gas turbocharger.



Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KEITH COLEMAN whose telephone number is (571)270-3516. The examiner can normally be reached on 5:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Cronin can be reached on (571)272-4536. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KAC
/K. C./
Examiner, Art Unit 3747

/Stephen K. Cronin/
Supervisory Patent Examiner, Art Unit 3747